drugs in the 1st and 2d line of therapy and routine follow-up costs were calculated based on prices of state procurements in the framework of national project of HIV prevention and the tariffs of the Russian health care system in 2012. One-way sensitivity analysis was performed. **RESULTS:** ABC/3TC+EFV is not associated with more costs vs ABC + 3TC + EFV regimen and even saves approximately 3390.60 rub (€80.30) per patient over 96 weeks of treatment. The sensitivity analysis showed that ABC/3TC FDC remains to be cost saving compared with ABC+3TC as long as the its package price is less than 6564.17 rub (€155.46) while keeping other model parameters unchanged. Still ABC/3TC+EFV is 28% more expensive than ZDV/3TC+EFV, though more effective and safe treatment option: the difference in costs vs ABC/3TC+EFV is 45267.05 rub. (€1,072.05) per patient over 96 weeks. **CONCLUSIONS:** FDC ABC/3TC may be considered as a more efficient and convenient treatment option than its monocomponents combination for first-line antiretroviral therapy of HIV patients in Russia. FDC ABC/3TC is more expensive versus ZDV/3TC, but the difference in costs seems appropriate for more safe and convenient alternative.

PIN30

THE IMPACT OF CHLAMYDIA AND GONORRHOEA POINT OF CARE NUCLEIC ACID AMPLIFICATION TESTS ON CLINICAL PATHWAYS AND COSTS IN GENITO-URINARY MEDICINE CLINICS IN THE UNITED KINGDOM

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OBJECTIVES: To explore new patient pathways using a chlamydia/gonorrhoea point of care nucleic acid amplification test (POC NAAT), and estimate and compare the costs of the new pathways with the current pathways using standard laboratory-based NAAT testing in the UK. **METHODS:** Consensus building activities were conducted with four sexual health clinics in the UK. They were selected through purposeful sampling to reflect a wide range of service delivery. Current pathways in which a chlamydia/gonorrhoea test was used were mapped out, and then new pathways using a POC NAAT were constructed. The consensus pathways were then costed using a patient pathway model built in Excel, and the cost of the current and POC NAAT pathways compared. **RESULTS:** Pathways using a POC NAAT for asymptomatic and symptomatic patients and chlamydia/gonorrhoea only tests were shorter and less expensive than most of the current pathways (average savings of £4-8 for symptomatic and asymptomatic screening pathways if the POC NAAT costs £18/test). Patients that are tested using the POC NAAT can be treated on the same day, thus saving costs compared to patients who are treated at a subsequent appointment. **CONCLUSIONS:** A POC NAAT could be introduced to services and reduce current costs, and may mean more appropriate and quicker care for positive patients.

PIN31

COST ANALYSIS OF VACCINATION FOR CHILDREN IN UKRAINE

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OBJECTIVES: In Ukraine immunization by age conducts against 10 infectious diseases: tuberculosis, hepatitis B (HBV), diphtheria, pertussis, tetanus, polio, Haemophilus influenzae, measles, rubella, mumps .The Law of Ukraine from 21.10.2009 N 1658-VI approved the Program of immunization and protection against infectious diseases during 2009-2015.During the years 2011-2012 the media incorrectly submitted data on the results of vaccination and many parents refused vaccination and as a result there were about 12,000 cases of measles and rubella, it's 80 times more than in previous years. On State program of vaccination in 2010 was allocated 237 mln UAH (1 USD=7.99 UAH), in 2011 - 237 mln, in 2012 - 302 mln UAH. **METHODS:** We conducted a cost per 1,000 children aged 0 to 1 years. Direct costs were calculated for vaccine Pentaxim (Sanofi Pasteur) which combined vaccine against hepatitis B (ukrainian producer "Biolik") and was compared the costs for vaccine Infanrix hexa (GSK). We included the vaccine costs, the loss during storage, and the costs of medical personnel for vaccination. We used the prices from the ukrainian electronic pricing database "MORION" on 01.06.2012. Analysis of evidence-based data has shown that Pentaxim is equal clinical efficacy of Infanrix hexa, but increases the rate of vaccination coverage against hepatitis B. **RESULTS:** The costs for Pentaxim and HiB vaccine were 633 240 UAH and costs of medical personnel (pediatrics, nurses) were 36763 UAH. The costs using vaccine Infanrix hexa were 803880 UAH, the costs of medical personnel – 18 381 UAH, respectively. **CONCLUSIONS:** In 2012, 385 116 children vaccinated by Infanrix hexa and general costs were 118 307 590 UAH vs 363 000 children by Pentaxim were 95 830 447 UAH. The results shown the need additional 22477143 UAH, which is justified to increase vaccination coverage against hepatitis B by 6%.

PIN32

ASSESSING THE ECONOMIC BURDEN AND HEALTH CARE UTILIZATIONS OF VETERAN PATIENTS DIAGNOSED WITH THE HEPATITIS C VIRUS IN THE UNITED STATES

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OBJECTIVES: To examine the economic burden and health care utilizations of the hepatitis C virus (HCV) in the U.S. veteran population. **METHODS:** A retrospective database analysis was performed using the Veterans Health Administration Medical SAS datasets 01OCT2008-30SEP2012). Patients diagnosed with HCV (International Classification of Disease 9th Revision Clinical Modification [ICD-9-CM] codes 070.41, 070.44, 070.51, 070.54, v02.62) were identified, and the first diagnosis date served as the index date. A comparator group was created by identifying patients without HCV but with the same age, region, gender and index year, and matching them by baseline Charlson Comorbidity Index. The index date for the comparator group was randomly chosen to reduce selection bias. A 1-year continuous health plan enrollment period pre- and post-index date was required for both groups. One-to-one propensity score matching (PSM) was used to compare health care costs and utilizations during the follow-up period between the HCV and comparison groups, adjusting for baseline demographic and clinical characteristics. **RESULTS:** Eligible patients (N=270,752) were identified for the HCV and comparison cohorts. After applying 1:1 PSM matching, a total of 107,953 patients were matched from each group and baseline characteristics were well-balanced. HCV patients were more likely to be hospitalized (15.90% vs. 3.19%, p<0.01) and report more emergency room (20.36% vs. 8.17%, p<0.01), physician office (99.18% vs. 61.06%, p<0.01), outpatient (99.25% vs. 61.84%, p<0.01) and pharmacy visits (91.11% vs. 63.13%, p<0.01) which resulted in higher health care costs for inpatient ($5,284 vs. $911, p<0.01), emergency room ($237 vs.$76, p<0.01), outpatient ($4,673 vs. $1,760, p<0.01), physician office ($4,247 vs. $1,560, p<0.01), pharmacy ($889 vs. $460, p<0.01) and total costs ($10,846 vs. $3,131, p<0.01) for HCV patients relative to the comparison group. **CONCLUSIONS:** Patients diagnosed with HCV were more likely to report higher health care utilization and were associated with a higher economic burden compared to the matched controls.

PIN33

VACCINE TIMELINESS: A COST ANALYSIS OF THE IMPLICATIONS OF DELAYED VACCINATION

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OBJECTIVES: : Pertussis (whooping cough) is a highly contagious bacterial disease. Infants in the first few months of life are particularly vulnerable with the highest reported rate of pertussis, risk of severe disease and deaths. Although, vaccination coverage rates have reached record-high levels in the United States (US), vaccine timeliness remains an issue. **METHODS:** Using data from the 2010 National Immunization Survey (NIS), we estimated the vaccination timeliness for DTaP vaccines in US infants. A previously published static model accounted for the reduction of incidence of pertussis by vaccination according to a strict adherence to the ACIP vaccination schedule. The annual numbers of pertussis cases prevented in infants and the associated costs avoided from a health care system perspective were estimated. **RESULTS:** From the NIS dataset, the mean age at DTaP vaccination was 76.3, 147.4 and 223.9 days, which means that on average each vaccination was in average delayed by 16.3, 27.4 and 43.9 days (with delays accumulating over time), respectively. The model predicted 3052 pertussis cases annually in infants <1 year of age in the US. Applying a strict adherence to the vaccination schedule, approximately 313 cases of pertussis, 112 hospitalisations and 1 death could be avoided each year. This translates into savings of 57 QALYs and $1.3 million of costs to the health care system. **CONCLUSIONS:** Although previous publications have presented the number of cases avoided by timely vaccination, to our knowledge this is the first one to present the associated costs. Administering vaccines on time not only avoids cases but may also have a significant impact on quality of life and costs. These costs avoided may be redirected to developing tools and/or infrastructure to improve the vaccine timeliness of infants in future. Further research is needed to better understand the role of vaccination timeliness and completion.

PIN34

STUDY OF ANTIBIOTIC CONSUMPTION PATTERN IN HOSPITAL ACQUIRED PNEUMONIA

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OBJECTIVES: To analyse the antibiotic consumption pattern in hospital acquired pneumonia (HAP) patients in a tertiary care teaching hospital **METHODS:** A prospective observational study, carried out in a tertiary care teaching hospital from January 2011 to December 2012. HAP patients who fulfill the inclusion criteria were identified and enrolled into the study after taking informed consent. Patients were followed from the day of diagnosis of HAP, till the day of discharge or death. Patient data like demography (age, sex), antimicrobial agents used (dose, duration of treatment), length of hospital stay and clinical outcome were recorded in a predesigned data collection form. The cost of antimicrobial therapy was recorded from the day of admission till the day of discharge. Antibiotic consumption was calculated using defined daily dose (DDD) methodology. **RESULTS:** Total 310 patients were included in the study. Among study population 229 (73.9%) patients were male and mean age was 55.9±18.4 (mean±SD). Out of 310 patients 218 were improved, 37 were worsened or discharged against medical advice and 55 were expired. Mean length of hospitalization was 9.45±6.75 (mean±SD) days. Total 27 antimicrobial agents were used for the treatment pneumonia among these patients. Among these antimicrobial agents, consumption (DDD/100 bed days) was highest for piperacillin-tazobactum (parenteral, 0.12) followed by ceftriaxone (parenteral, 0.10), azithromycin (oral, 0.10) and trimethoprim-sulphamethoxazole (oral, 0.08). The percentage of treatment success was highest among patients treated with piperacillin-tazobactum+macrolide combination (10%) followed by cephalosopin+macrolide combination (8%). However the cost of treatment was high for piperacillin-tazobactum+macrolide regimen **CONCLUSIONS:** This study provides estimate of quantities of different antimicrobial agents used in the treatment of hospital acquired pneumonia. Piperacillin-tazobactum (parenteral) is highest consumed among 27 antimicrobial agents. Since percentage of treatment success is almost similar for piperacillin-tazobactum+macrolide combination (10%) and cephalosopin+macrolide combination (8%), use of cephalosopin+macrolide combination should be encouraged in susceptible patients considering the lesser cost.

PIN35

COUNTING THE COST OF MENINGOCOCCAL DISEASE IN FRANCE

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OBJECTIVES: Invasive meningococcal disease (IMD) is life-threatening and can result in severe sequelae. In France, no data has been published on the costs of severe IMD cases. This study aimed to estimate lifelong management costs associated with severe cases of IMD in France. **METHODS:** Two scenarios were developed: a 6-year old child with *purpura fulminans* resulting in amputation of both legs below the knee and a 3-year old with meningitis and severe neurological sequelae. Additional scenarios included other typical sequelae of IMD: chronic renal insufficiency (CRI), profound deafness, epilepsy. Scenarios were validated by national experts of IMD. Health, disability, educational and other resources were obtained from experts and families of patients with similar sequelae. Unit costs (2013) were obtained from the literature, the National Health Insurance (NHI) and companies' websites. Time horizon was based on life expectancies of patients (77 and 55-years respectively). A 4% discount rate decreasing to 2% after 30-years was applied. Costs are presented from NHI, public funded organisations and patient or his/her private health insurance perspectives. **RESULTS:** *Purpura fulminans*with amputations is associated with a lifelong discounted cost of €768,874. Adding CRI doubles the amount (€1,480,545). Meningitis with severe neurological sequelae results in a lifelong discounted cost of €1,924,475. Adding profound deafness and epilepsy slightly increases the total cost (€2,267,251). The first year is the most expensive in both scenarios (€166,890 and €160,647 respectively). The main cost drivers are respectively for each scenario prostheses and child/adult stay in institutions. Overall, NHI covers 1/2 of total cost, public funded organisations 1/3 and patient/private health insurance for the remainder. **CONCLUSIONS:** This study fills a gap in the body of knowledge on IMD sequalae care and costs in France. The potentially high economic burden of IMD, in addition to its physical, psychological and social burden, reinforces the need for prevention.

PIN36

HOW MUCH DENGUE COSTS TO BRAZIL? A RETROSPECTIVE ADMINISTRATIVE CLAIMS ANALYSIS FROM THE PUBLIC PAYER PERSPECTIVE

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OBJECTIVES: In the 21st century, Brazil became the country with the most reported cases of dengue fever. This study aims to describe hospital costs for managing dengue in the Brazilian Public Healthcare System (BPHS). **METHODS:** BPHS Hospital Information Database (SIH/SUS) was used to collect data for the period of 2008-2011. Individual claims coded as "Classic Dengue (CD) Treatment" or "Dengue Hemorrhagic Fever (DHF) Treatment" in the SIH/SUS (regardless ICD-10 codes) were identified in this system and compiled by geographic region, disease type and year. **RESULTS:** A total of 304,548 individual dengue claims were obtained for the 2008-2011 period. They represented an overall cost of 97,642,495BRL for all 4 years (ranging from 17,843,318BRL in 2009 to 31,235,501BRL in 2010). The 4-year national average cost per inpatient admission was 321BRL (295BRL [2008] - 333 BRL [2010]), with mean length of stay (LOS) of 3.3 days and in-hospital mortality rate of 0.46%. The northeast region represented 43.1% of overall expenditures, while the south accounted for only 1.6%. The hemorrhagic syndrome was responsible for 10%, 7% and 10% of overall cost, individual dengue claims and total hospitalization days, respectively. Mean cost per inpatient admission for DHF was 50.6% higher than CD's (468BRL vs. 316 BRL), mean LOS was 55.2% higher (5.0 vs. 3.2 days) and in- hospital mortality rate was 997.8% higher than the one from CD (3.0% vs. 0.27%). Stratifying by region, 9.6%, 36.6%, 34.7%, 1.7% and 17.4% of DHF costs were respectively localized on the North, Northeast, Southeast, South and Midwest. **CONCLUSIONS:** The analysis of SIH/SUS administrative information provided insightful information about dengue costs. Although DHF represented only 7% of individual claims, its mean cost per inpatient admission and in-hospital mortality rate was considerably higher than CD's, persisting as an object of concern for health authorities.

PIN37

BURDEN OF HERPES ZOSTER AND POST-HERPETIC NEURALGIA IN SWEDEN

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OBJECTIVES: Herpes zoster (HZ) and post-herpetic neuralgia (PHN), one of its more severe and frequent complication, are very painful and debilitating conditions. The societal economic burden of HZ in Sweden is not well described today. The objective of this study is to describe the burden of HZ and PHN in Sweden in the year 2011. **METHODS:** Data for inpatient care, outpatient primary care, the prescriptions of drugs, sick leave and the number or diagnostic tests were collected from national databases. The incidence of the HZ was estimated based on the number of prescriptions of antiviral drugs, on which a correcting factor has been applied. **RESULTS:** Almost 30,000 patients were diagnosed with HZ, with two third occurring in patients older than 50 years. The societal cost to treat these patients, including the cost to treat those patients who later developed PHN, added up to nearly 227 MSEK (21M€) which corresponds to 7,600 SEK per patient (876€). The main contributors to the total cost for the treatment of HZ patients were primary care (43%); sick leave (28%); hospitalization (10%) and specialist care (7%). Medication was a relatively small contributor with 8.5 MSEK (4%) to the overall costs for patients at all ages. **CONCLUSIONS:** The current study demonstrates that the burden of HZ is significant in Sweden, especially in people aged 50 years and older. This economic burden is expected to increase in the coming years since the population older than 50 years represents a growing proportion of the population. Thus, the society and the health care payers potentially have a lot to gain by introducing a vaccination program to patients aged 50 years and older, to reduce the burden and increase their quality-of-life.

PIN38

HOSPITAL ADMISSIONS RELATED TO TUBERCULOSIS IN BRAZIL: EPIDEMIOLOGICAL AND ECONOMIC PROFILE, FROM THE PUBLIC HEALTH CARE PERSPECTIVE

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OBJECTIVES: Among infectious diseases, tuberculosis is the second leading cause of mortality worldwide. Since 2000, Brazil is one of twenty two countries classified as "high burden countries" by World Health Organization. This study aims to report epidemiological and economic profile of tuberculosis related hospitalizations in Brazil. **METHODS:** Retrospective analysis of Brazilian public hospital admissions for tuberculosis was developed according to ICD-10 classification (A15-A19) as reported in Brazilian Hospital Information System (SIH/SUS) database, from January 2008 to December 2011. Epidemiological data were extracted from public reporting system. Costs represent federal reimbursement values for hospitalizations (medical procedures, exams, drugs and fees) estimated in 2013 Brazilian Real (BRL). **RESULTS:** Reported tuberculosis cases and prevalence rates per 100,000 inhabitants for 2008, 2009, 2010, and 2011 were: 85,329 (45.0); 88,800 (46.4); 86,654 (44.8); and 89,759 (46.0), respectively. Hospitalizations in the same period were 18,216, 15,338, 16,153, and 19,048, leading to a hospitalization rates of 21.35%, 17.27%, 18.64%, and 21.22% with mean length of stay varying from 15 to 17 days. Mortality rates showed stability, varying from 2.95% to 3.49% for overall tuberculosis related deaths, and 6.19% to 8.14% for in-hospital mortality. About 40% of all deaths were related to hospitalized patients. From 2008 to 2011, hospitalizations costs were 19,546,160BRL, 21,791,027BRL, 23,889,130BRL and 29,410,353BRL, respectively, with an increase in cost per patient over the years (1,073BRL in 2008 to 1,544BRL in 2011). Total cost for the period represents 3.5% of all hospitalizations costs related to infectious diseases (ICD-10 chapter I). Geographic distribution indicated southeast region accounting for 45% of cases, 38% of hospital admissions, and 47% of costs. **CONCLUSIONS:** Tuberculosis is a major public health issue, with great impact on patients' health and growing hospitalization related costs for the Brazilian health care system. Southern region concentrates most cases and costs, probably due to the presence of important treatment and diagnoses centers.

PIN39

USE OF ANTIBIOTICS AND PRESCRIPTION MEDICATION IN INFLUENZA DISEASE IN THE UNITED KINGDOM

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OBJECTIVES: Determine the use of antibiotics and prescription medication in primary care in the management of influenza, stratified by age, risk and complications. **METHODS:** A cross-sectional observational study was carried out using data derived from GPRD, (January 2001 - March 2009). Subjects included were: all those with general practitioner (GP) coded episodes of care for acute respiratory events related to infection (influenza and Influenza-like-illness). Analysis was stratified by age and 'at-risk' status recommended for influenza vaccination in the UK. Primary prescription information was collected for the following categories: antipyretics/analgesics, antibiotics, amantadine, aminoglycosides, nasal decongestants, antisecretory drugs and mucosal protectants, and antihistamines. UK 2011 NHS reference costs were used. **RESULTS:** A total of 53% of all patients had at least one medical prescription with 30% of patients receiving antibiotics. Proportionally more patients with complicated influenza had prescriptions (83%) compared to patients with uncomplicated influenza (50%), and most cases were unvaccinated. Across all age groups complicated influenza had a greater number of prescriptions compared to those with uncomplicated cases (3.0 vs. 2.5). 67% and 27% of complicated and uncomplicated influenza cases received antibiotics. Antipyretics and analgesics were prescribed to 7% of patients, with antisecretory drugs and mucosal protectants prescribed to 6% of patients. Antibiotics, analgesics and antisecretory drugs (including mucosal protectants), were the three most commonly prescribed classes of drugs, and represent 41%, 31% and 12% of all prescriptions respectively. The annual cost is expected to be around £13,956,177 per annum with 40% of this cost attributable to antibiotics. **CONCLUSIONS:** In-hospital and over-the-counter medication use is not collected in this database, therefore this is not a comprehensive assessment of the full extent of pharmaceutical management of influenza. The extensive use of antibiotics prescribed by GPs is of concern, especially in uncomplicated influenza episodes at a time of increasing resistance. Current clinical practice therefore needs urgent review.

PIN40

EVALUATING ECONOMIC BURDEN OF TICK-BORNE ENCEPHALITIS. EVIDENCE FROM RUSSIA

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About 3500 people have suffered tick-borne encephalitis (TBE) in 2011 in Russia, and approximately 16% of them had focal form with a high case-fatality and disability rate. However, no research has investigated its social costs. **OBJECTIVES:** to evaluate the socio-economic burden of TBE in Russia. **METHODS:** We proposed a probability-tree model accounting for 4 clinical outcomes of the disease: full recovery, progression to chronic disease, disability, and death; probabilities were taken from Russian clinical and epidemiological studies. Each outcome was associated with particular costs that included direct current and deferred medical and social costs. Tariffs of the Russian health care system were used to calculate all medical costs; indirect costs were estimated using the average monetary daily productivity and mean disability allowance. All future costs were discounted to the basis year (2011). The model estimated the one-year average socio-economic burden of the disease which could be aggregated into the gross burden by incorporating data on annual TBE incidence in previous years. Additionally we evaluated disability adjusted life years (DALYs) attributable to TBE using standard WHO methodology. **RESULTS:** We found that economic TBE burden in Russia in 2011 was about $49.5 million, 78% of which was deferred costs, caused by death and disability. We